



WASHINGTON STATE DEPARTMENT OF
Natural Resources

**STANDARD
RECLAMATION PLAN
(Form SM-8A)**

DO I NEED TO FILE A RECLAMATION PLAN?

The Surface Mining Act (RCW 78.44), as amended in 1993, requires you to file a reclamation plan for:

☛ **Mines more than three acres in size**

You must file a reclamation plan for mines in which three or more acres (including highwalls, pit floors, stockpiled areas, side-cast areas, and processing-plant sites) will be or have been disturbed by mining.

A disturbed area is any place where operations in preparation for or during surface mining physically disrupt, cover, compact, move, or otherwise alter the characteristics of soil, bedrock, or topography that existed prior to such operations. Disturbed areas may include, but are not limited to: working faces, excavated water bodies, pit floors, processing plant sites, stockpile sites, spoil-pile sites, and equipment staging areas.

Disturbed areas do not include mine access roads unless these roads have characteristics of topography, drainage, slope stability, or ownership that make reclamation necessary.

☛ **Mines with working faces higher than 30 feet and steeper than 45°**

You must file a reclamation plan for mines with working faces that are both higher than 30 feet and steeper than 1 foot horizontal to 1 foot vertical (45°), unless there is a pre-existing natural hazard in the area.

Note: Lands that have already been reclaimed to the standards given in RCW 78.44 should not be included when calculating the disturbed-area or face-height thresholds.

This form will help you by providing a checklist of the information required. Even so, it is not uncommon for applicants to have to modify their original plan before it is acceptable to the Department.

Note: This form is also available on disk.

Note: When signed by the applicant and approved by the Department of Natural Resources, this document and the associated maps, cross sections, and other attachments will be the approved reclamation plan for this permit that the permit holder must follow for the mine site. Variation from the approved reclamation plan may require that a new plan be submitted to the Department for approval.

Please answer all questions legibly in ink and sign.

NAME OF APPLICANT/PERMIT HOLDER(S) (Type or print in ink.) This will be the name(s) on the permit and performance security. BOE SAND AND GRAVEL DBA ALPINE SAND AND GRAVEL GORDON BOE		NAME OF MINE ALPINE SAND AND GRAVEL				
		Street address and milepost of surface mine 7141 RIXIE RD OLYMPIA WA 98501				
MAILING ADDRESS ALPINE SAND & GRAVEL, INC P.O. BOX 443 EAST OLYMPIA WA 98540-0443 Telephone 360-491-2822		Distance (miles)	Direction from	Nearest community TUMWATER		
		COUNTY _____ No attachments will be accepted. Legal description of permit area:				
		1/4	1/4	Section	Township	Range
		S 1/2	SW 1/4	6	17N	1W
		N 1/2	SW 1/4	6	17N	1W
SURFACE OWNERSHIP Give names and addresses of all individuals with possessory interest in land. (Continue on another sheet if more space is needed.) SAME AS ABOVE		MINING AREA TO BE DISTURBED (Include all acreage to be disturbed by mining, reclamation setbacks, and associated activities during the life of the mine.) In the following 36 months 80 acres Total during the life of the mine (This should be the same number as on Form SM-2.) 145 acres				

RECEIVED
JUN 26 1996
DNR Central Region

PLANNING FOR RECLAMATION

Reclamation of a site must meet or exceed the minimum reclamation standards required by the Washington State Surface Mining Act (RCW 78.44). The primary purpose of the Act is to insure that segmental reclamation occurs promptly and properly for all permitted mines. Each requirement of the reclamation law may not fit every mine. The law provides some latitude for variance. If you have a good reclamation idea or a unique operating problem, see the reclamation officer at your Department of Natural Resources Region office.

WHAT IS A RECLAMATION PLAN?

A reclamation plan can be thought of as both a financial planning document and a contract that defines the topography, drainage, and vegetation of the site after reclamation is complete. This plan describes the permit holder's strategy to achieve acceptable reclamation at the lowest possible cost and establishes an economic limit of production for each site based on the area available for mining and the grade of the deposit. It also identifies and addresses mitigation of potential environmental impacts, such as gulying of impermeable clays, for which the permit holder is liable; establishes a segmental sequence of mining and reclamation that will avoid unnecessary earth moving; and identifies equipment needed.

The plan should provide a schedule for initiating reclamation as soon as possible on parts of the site where surface mining has been completed. Reclamation activities, to the extent feasible, should be conducted simultaneously with surface mining, and, in any case, reclamation must be completed on

any segment within two years of abandonment of mining on that segment (except as provided for in a segmental reclamation agreement).

A reclamation plan should be simple, practical, and easy to implement. It should be flexible, taking into account the potential for unanticipated changes in the geology and the market that will affect reclamation. The plan should have provisions for quality reclamation even if mining to depletion never occurs.

Form SM-8A and the required maps and cross sections are adequate documentation for most mines. In some instances, separate reports, such as an expanded checklist, a hydrogeologic evaluation, or an environmental impact statement, may be necessary.

When signed by the applicant/permit holder(s) and landowner(s) and approved by the Department of Natural Resources (DNR), this document and the associated maps, cross sections, and other attachments will be considered the approved reclamation plan for this permit, which the permit holder must follow for the mine site. Significant variations from the approved reclamation plan require that a new reclamation plan be submitted for approval. Managers and senior equipment operators must be familiar with the reclamation obligations to which the permit holder has committed.

The checklist below will help you be sure that nothing is forgotten. Neatness counts! If a plan is not neat and legible and in ink, it will be rejected.

CHECKLIST OF MINIMUM RECLAMATION STANDARDS

GENERAL INSTRUCTIONS

Please check the appropriate boxes and fill in the blanks below. Where required, please explain in the space provided. If the question does not apply to your mine, please write in "NA" for "not applicable" to let us know you have read the question. If additional space is needed, write "(Continued)" in the blank and restate the question and continue your answer on a separate sheet, or write "See attached report" in the blank and attach a report. Any unanswered questions may result in this form being returned to you unapproved.

MINE TYPE

Type of mine: ☒ pit ☐ quarry

Material(s) to be mined: ☒ sand and gravel ☐ rock or stone ☐ clay ☐ metal ☐ limestone ☐ silica

☐ other _____

Deposit type: ☒ glacial ☐ river flood plain (alluvial)

☐ river channel deposits ☐ talus ☐ bedrock ☐ unknown

☐ lode ☐ other _____

HYDROLOGY

Water table depth is 70-60 feet below sea level, or

☒ the surface, or ☐ other _____

Annual fluctuation of water table is from NO DATA GIVEN PER SOILS SURVEY feet on MANUAL to FOR THE feet on AREA

Hydrologic Group A - (date) SEE SOILS PROFILE (date)

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Direction of ground water flow: TOWARDS RIVER

Is the aquifer perched? ☐ yes ☒ no

Is the shallowest aquifer: ☒ confined ☐ unconfined?

The site will be mined: ☐ wet ☒ dry ☐ both

Explain _____

If any of the following conditions apply, a hydrogeologic evaluation that outlines measures to protect against or mitigate avulsion, erosion, and damage to fisheries may be necessary. The site is in a:

☐ river or stream channel ☐ 100-year flood plain

☐ critical aquifer recharge area ☐ sole source aquifer

☐ wellhead protection area ☐ special protection area

☐ public water supply watershed

☐ designated aquifer protection area

Hydrogeologic evaluation is attached

☐ yes ☒ no

Reclamation Permit/Application No. _____

Explain: NO ACTIVITIES
WITHIN 200' OF OHW
NO STAKING NEEDED

SUBSEQUENT LAND USE

Subsequent land use: ☒ industrial ☐ agricultural
☐ forestry ☒ residential ☐ wetlands and lakes
☒ other RRR FOR EXPANSION
RRR INDUSTRIAL RESIDENTIAL
Subsequent land use is compatible with county EXISTING
or municipal comprehensive plan? ☒ yes ☐ no
County or Municipality Approval for
Surface Mining (Form SM-6) is attached? ☒ yes ☐ no
If any answers are no, explain: _____

Note: Approval of the reclamation plan and (or) Form SM-6 does not vest the subsequent land use. Subsequent use may be changed by the permit holder with the written approval of local government up until the time reclamation is complete and the reclamation permit is terminated. Change of subsequent use by the permit holder may require submission of revised Forms SM-6 and SM-8A and a State Environmental Policy Act (SEPA) checklist.

SITE PREPARATION

Permit and Disturbed Area Boundaries

The permit holder should delineate the permit boundaries and maximum extent of disturbance and setbacks with clearly visible permanent boundary markers. The permit holder must maintain the boundary markers until the termination of the reclamation permit.

Boundary of the permit area has been marked with permanent boundary markers? ☐ yes ☒ no

Boundaries of areas to be disturbed by mining (permit area minus setbacks) have been marked with permanent boundary markers? ☐ yes ☒ no

If no, explain: SETBACKS WILL BE
MARKED AS APPROACHED
SHORELINE SETBACK MARKED

Saving Topsoil and Overburden for Reclamation

Prior to any surface mining operation, the permit holder shall carefully stockpile all available topsoil and overburden in stable storage areas for use in later reclamation or immediately move them to reclaim adjacent depleted segments. Topsoil needed for reclamation may not be sold or given away or removed or

mixed with sterile soils. Topsoil should not be used for screening berms required by county or municipal government because this would preclude its timely use for reclamation.

Depth of topsoil is 0-20" feet.
Depth of subsoil is 21-60" feet.
Depth to bedrock is N/A feet.

Topsoil will be salvaged where possible? ☒ yes ☐ no
If no, explain: _____

Topsoil and overburden will immediately be moved to reclaim adjacent depleted segment? ☒ yes ☐ no

If no, explain: _____
SEE MANAGEMENT
PLAN

Topsoil and overburden storage areas will be beyond the limits of mining but positioned for the shortest possible downhill transport during reclamation? ☒ yes ☐ no

If no, explain: _____
SEE MANAGEMENT
PLAN

Before materials are moved, vegetation will be cleared and drainage planned for the storage areas? ☒ yes ☐ no

If no, explain: _____

Storage areas will be stabilized with vegetation if materials will be stored more than one season? ☒ yes ☐ no

If no, explain: _____

Permanent Setbacks and Screens

Permanent setbacks and screens help control erosion, and provide seed sources for reclamation. Screens should consist of native vegetation and (or) topography. Permanent setbacks are not required for pits (unconsolidated deposits) but may still be useful if the mine has close neighbors or adjacent scenic resources, and setbacks may be required by local government. Permanent setback and screen material should not be mined or used for reclamation. The minimum permanent setback for quarries (consolidated deposits) permitted after June 30, 1993, is 30 feet.

The permanent setback for this site will be 40' feet wide.

Reclamation Setbacks

If the cut-and-fill method will be used to restore slopes rather than mining to a final slope, a setback from the property boundary or permanent setback (where used) is necessary to insure sufficient material for reclamation. The reclamation setback for pits (unconsolidated deposits) permitted after June 30, 1993, must be at least equal to the maximum anticipated height of the adjacent working face. (A setback equal to the working face will provide only enough material for a 2:1 slope. To meet the standards of the law for slopes of between 2:1 and 3:1, a larger setback is generally required.)

Maximum depth of the mine will be

135' 120 feet. 140 MSW
BASINS MAJORITY FLOOR

The reclamation setback (material that can be used for reclamation) for this site will be 120 feet wide.

Reclamation setback has been marked with permanent boundary markers? ☐ yes ☒ no

If no, explain: MARKED AS APPROACHED

This site will not have a reclamation setback because a backfilling plan is attached? ☐ yes ☒ no

This site will not have a reclamation setback for the following reason(s): N/A

Setbacks to Protect Streams and Flood Plains

Generally no mine may be located in or near streams or on 100-year flood plains unless a Shoreline Permit has been issued. Setbacks from streams and flood plains should be at least 200 feet wide. Wider setbacks may be necessary for stream and flood-plain stability and to prevent breaching of the pit at a later date.

A stream setback of at least 200 feet has been marked with permanent boundary markers? ☐ yes ☒ no

A setback of at least 200 feet from the 100-year flood plain has been marked with permanent boundary markers? ☐ yes ☒ no

Explain: TEMPORARY MARKERS HAVE

BEEN SET 200' OFF W.
FROM

Copy of Shoreline Permit from the Department of Ecology and (or) local government is attached? ☒ yes ☐ no

EXISTING GOUGAES
Hydraulic project approval from the Department of Fisheries and Wildlife is attached? ☐ yes ☒ no

NO PERMITS FOR EXTENSION
AREA

Conservation Setbacks

In special cases, setbacks may be necessary to protect unstable slopes, wildlife habitat, or other sensitive areas or to limit turbid water discharge from areas that will be disturbed.

Conservation setbacks are necessary for: ☐ unstable slopes
☐ wildlife habitat ☐ water quality
☐ other _____

Explain: _____

N/A

Conservation setbacks have been marked with permanent boundary markers? ☐ yes ☐ no

SEGMENTAL RECLAMATION

The permit holder must reclaim each segment of the mine within two years of completing mining on that segment and (or) in the manner described in this reclamation plan or a separate segmental reclamation agreement. Segmental reclamation helps establish self-sustaining vegetation, especially native pioneer vegetation, and promotes stable slope conditions and improves the water quality and appearance of the site.

Permit area has been divided into segments for mining and reclamation purposes? ☒ yes ☐ no

If no, explain: _____

Each segment is smaller than seven acres, has less than 500 linear feet of working face, and has characteristics that make it feasible to treat it as a unit? ☐ yes ☒ no

Explain: SEE BELOW

A schedule for the sequence of mining and segmental reclamation of each segment or a Segmental Reclamation Agreement is attached? ☒ yes ☐ no

If no, explain: _____

SEE SOIL MANAGEMENT
PLAN AND OPERATION PLANS

MINING PRACTICES TO FACILITATE RECLAMATION

Removal of Vegetation

Vegetation will be removed sequentially from areas to be mined to prevent unnecessary erosion? ☒ yes ☐ no

If no, explain: _____

If yes, give details; if no, explain: _____

Small trees and other transplantable vegetation will be salvaged for use in revegetating other segments? ☒ yes ☐ no

Revegetation, sheeting, and (or) matting will be used to protect areas susceptible to erosion? ☒ yes ☐ no

If yes, give details: SMALL TREES AND SHRUBS WILL BE TRANSPLANTED IN MINED OUT AREAS NEEDED FOR EROSION CONTROL SCREENS OR FOR WILDLIFE OR JUST TO REVEG

If yes, give details; if no, explain: REVEGETATION OR OTHER MEASURES IF NECESSARY

Wood and other compactible debris should not be buried; it should be recycled, removed, burned, or chipped. If wood and other compactible debris will be buried, solid-waste disposal and land-use permits must be obtained.

Temporary water-control systems used for erosion control will:

Wood and other compactible debris will be: ☐ recycled
☒ removed ☐ chipped ☐ burned ☐ buried
☐ used to synthesize topsoil or mulch
☐ other _____

Divert clean water around the pit? ☒ yes ☐ no

Trap sediment-laden runoff before it enters a stream? ☒ yes ☐ no

Result in essentially natural conditions of volume, velocity, and turbidity? ☐ yes ☐ no

Be designed for 25-yr, 24-hr peak event? ☐ yes ☐ no

Be removed or reclaimed? ☒ yes ☐ no

If any answers are no, explain: _____

Solid-waste disposal, burning, and land-use permits are attached? ☐ yes ☒ no

Some wood and other debris will be salvaged and used for fish and wildlife habitats? ☐ yes ☒ no

REVEGETATION, WATER WILL BE DIRECTED AWAY FROM ADJACENT PROPERTIES IF NECESSARY

If yes, give details; if no, explain: _____

SITE IS DEFINED AS POOR SITE FOR WILDLIFE HABITATS WILL PROVIDE MEASURES FOR EXISTING LIFE

Ditches, flumes, and (or) armored channels will be established to prevent erosion of setbacks on neighboring properties? ☐ yes ☒ no

If yes, give details; if no, explain: _____

REVEGETATION/WATER PERCOLATES OR IF IT DOESN'T PERC WITH BE DIRECTED AWAY FROM ADJACENT PROPERTIES

Erosion Control

Erosion control measures are generally necessary during mining to avoid severe erosion or loss of topsoil. Each site must be evaluated on an individual basis, and multiple techniques to control erosion may be necessary. The Department of Ecology requires discharge permits for most surface mines. In addition, some mines at higher elevations should plan for the effects of rain-on-snow events on slope stability and erosion.

Stormwater conveyance ditches and channels will be lined with vegetation or riprap? ☐ yes ☐ no

If yes, give details; if no, explain: _____

FLOORS WILL BE GRADED TOWARDS RETENTION BASINS

Pit floor will slope at gentle angles toward highwall, sediment retention pond or proper drainage? ☒ yes ☐ no

Natural and other drainage channels will be kept free of equipment, wastes, stockpiles, and overburden?

☒ yes ☐ no

If no, explain: _____

RECLAMATION TOPOGRAPHY

The goal of reclamation is to create stable, usable land. New drainages should be established, and contours should blend smoothly with adjacent offsite topography. To promote slope stability and revegetation, slopes should generally vary between 2.0 and 3.0 feet horizontal to 1.0 foot vertical or flatter. Slopes steeper than 1.5 feet horizontal to 1.0 foot vertical are not acceptable for pits except in limited areas to tie in to offsite topography. The reclaimed mine site should appear natural—that is, slopes should be sinuous and right-angle corners should be eliminated by rounding. Sinuous slopes can be formed either by mining to the prescribed angles, which is generally more cost effective, or by using the cut-and-fill method. Backfilling is not allowed unless prior approval is obtained from DNR.

FINAL SLOPES

Slopes will vary in steepness?

☒ yes ☐ no

If no, explain: _____

Slopes will have a sinuous appearance in both profile and plan view?

☒ yes ☐ no

If no, explain: _____

Slopes will have no large rectilinear (that is, right angle or straight, planar) areas?

☒ yes ☐ no

If no, explain: _____

ONLY WHERE NECESSARY

Where reasonable, tracks of the final equipment pass will be preserved and oriented to trap moisture, soil, and seeds and to inhibit erosion?

☒ yes ☐ no

If no, explain: _____

Slope Requirements for Pits and Waste Rock Dumps

For unconsolidated material (such as sand and gravel pits, waste rock dumps, etc.), final slopes must meet the following requirements:

Slopes will vary between 2.0 and 3.0 feet horizontal to 1.0 foot vertical or flatter, except in limited areas where steeper slopes are necessary to create sinuous topography and control drainage?

☒ yes ☐ no

If no, explain: _____

For pits, slopes will not exceed 1.5 feet horizontal to 1.0 foot vertical except as necessary to blend with adjacent natural slopes?

☒ yes ☐ no

Give details: _____

SEE PLANS

Slope Requirements for Quarries and Hardrock Metal Mines

For consolidated rock, such as basalt, andesite, granite, limestone, or quartzite, a vertical highwall face may be acceptable. There is no prescribed angle or height.

Some slopes will be reclaimed as cliffs?

☐ yes ☐ no

If yes, explain by checking the appropriate box below:

☐ Slopes steeper than 1.0 foot horizontal to 1.0 foot vertical are an acceptable subsequent land use as confirmed on Form SM-6.

☐ Cliffs are indigenous to the immediate area and already present a threat to human life. Photo attached to document presence of cliffs.

☐ Geologic or topographic characteristics of the site preclude slopes being reclaimed at a flatter angle and are an acceptable subsequent land use as confirmed on Form SM-6.

Explain: N/A

Selective blasting will be used to remove benches and walls and to create chutes, buttresses, spurs, scree slopes, and rough cliff faces that appear natural?

☐ yes ☐ no

If yes, give details; if no, explain: _____

N/A

Reclamation blasting will be used to reduce the entire highwall to a scree or overburden slope less than 2.0 feet horizontal to 1.0 foot vertical? ☐ yes ☐ no

If yes, give details; if no, explain: _____

N/A

Small portions of benches will be left to provide habitat for raptors and other cliff-dwelling birds? ☐ yes ☐ no

Backfilling

If backfilling is proposed, it is necessary to give the source of the backfill material, quantity needed, grading and compaction scheme, erosion control plan, and immediate vegetation plan. If backfill is to be brought from off site, copies of all permits from local government will be necessary.

Slopes will require significant backfilling? ☐ yes ☒ no

DNR-approved backfilling plan and (or) permits are attached? ☐ yes ☐ no

If no backfilling plan attached, explain: _____

Backfilling will be done with overburden material (not topsoil) perched above the mine? ☐ yes ☒ no

If no, what is the source of the material? _____

All grading/backfilling will be done with non-noxious, non-combustible, relatively incompactible solids? ☐ yes ☒ no

If yes, give details; if no, explain: _____

Backfilled slopes will be compacted? ☐ yes ☒ no

If yes, give details; if no, explain: _____

MINE FLOORS

Flat areas will be formed into rolling mounds? ☐ yes ☒ no

If yes, give details; if no, explain: _____

Mine floor will be gently graded into sinuous drainage channels to preclude sheet-wash erosion during intense precipitation? ☒ yes ☐ no

If yes, give details; if no, explain: _____

FINAL MINE FLOORS WILL DRAIN INTO DETENTION BASINS

Mine floor will be bulldozed, plowed, ripped, or blasted to foster revegetation? ☒ yes ☐ no

If yes, give details; if no, explain: _____

ONLY IN COMPACTED AREAS

LAKES, PONDS, AND WETLANDS

If surface mining results in the formation of a swamp, pond, or lake useful for recreation, wildlife habitat, water quality control, or other beneficial wetland purposes, the site must be reclaimed in the following manner:

Reclaimed areas below the permanent low water table in soil, sand, gravel, and other unconsolidated material will have a slope no steeper than 1.5 feet horizontal to 1.0 foot vertical? ☒ yes ☐ no

If yes, give details; if no, explain: _____

NOT INTERSECTING WATER TABLE

If not already present, soils, silts, and clay-bearing material will be placed below water level to enhance revegetation? ☐ yes ☐ no

If yes, give details; if no, explain: _____

N/A

Some parts of pond and lake banks will be shaped so that a person can escape from the water? ☐ yes ☐ no

If yes, give details; if no, explain: _____

N/A

Armored spillways or other measures to prevent undesirable overflow or seepage will be provided to stabilize bodies of water and adjacent slopes ☐ yes ☐ no

If yes, give details; if no, explain: _____

N/A

Wildlife habitat will be developed, incorporating such measures as:

- Sinuuous and irregular shorelines? ☐ yes ☐ no
Varied water depths? ☐ yes ☐ no
Shallow areas <18 inches deep? ☐ yes ☐ no
Islands and peninsulas? ☐ yes ☐ no
Give details: _____

N/A

Ponds or basins will:

- Be located in stable areas? ☒ yes ☐ no
Have sufficient volume for expected runoff? ☒ yes ☐ no
Have an emergency overflow spillway? ☐ yes ☒ no
Have protected spillways and outfalls (for example, rock armor) to prevent failure and erosion? ☐ yes ☒ no

If any answers are no, explain: RUN-OFF WILL BE CONTROLLED WITH SLOPES AND REVEGETATION & GRADING INTO DETENTION PONDS

Proper measures will be taken to prevent seepage from water impoundments that could cause flooding outside the permitted area or adversely affect the stability of impoundment dams or adjacent slopes? ☐ yes ☐ no

If yes, give details; if no, explain: N/A

Written approval from other agencies with the jurisdiction to regulate impoundment of water is attached? ☐ yes ☐ no

If no, explain: N/A

Final Drainage Configuration

Reconstructed drainages must be graded and contain enough energy-dissipation devices so that essentially natural conditions of water velocity, volume, and turbidity are re-established within six months of reclamation of each mine segment.

Drainage will be capable of carrying the peak flow of the 25-year, 24-hour precipitation event? (Data are available at DNR Region offices.)? ☐ yes ☐ no

If yes, give details; if no, explain: _____

Drainages will be constructed on each reclaimed segment to control surface water, erosion, and siltation, and to direct clean runoff to a safe outlet? ☒ yes ☐ no

If yes, give details; if no, explain: _____

SITE GRADED INTO RETENTION PONDS AND VEGETATION. NO DISCHARGE

The grade of ditches and channels will be constructed to limit erosion and siltation? ☒ yes ☐ no

If yes, give details; if no, explain: _____

SEE ABOVE

SITE CLEANUP AND PREPARATION FOR REVEGETATION

Dealing with Hazardous Materials

If surface mining will expose hazardous natural materials, such as acid-forming coals and metalliferous rock or soil, the permit holder must attach a plan to handle such materials. All grading/backfilling to cover the hazardous materials must be made with non-noxious, noncombustible, relatively incompactible solids unless the permit holder provides written approval from all appropriate solid waste regulatory agencies. Other methods may also be acceptable.

Natural hazardous materials are present at the mine site? ☐ yes ☒ no

The final ground surface drains away from any hazardous natural materials? ☐ yes ☒ no

If yes, give details; if no, explain: N/A

Plan for handling hazardous mineral wastes indigenous to the site is attached? ☐ yes ☒ no

If no, written approval from all appropriate solid waste regulatory agencies is attached? ☐ yes ☒ no

Removal of Debris

All debris (garbage, "bone piles", treated wood, etc.) will be removed from the site? ☒ yes ☐ no

All temporary sheds, scale houses, and other structures will be removed from the site? ☒ yes ☐ no

If either answer is yes, give details; if no, explain: _____

WHEN SITE IS RECLAIMED ALL STRUCTURES WILL BE DEMOLISHED AND REMOVED AWAY FROM SITE

SOIL REPLACEMENT

If available, up to 3 feet of topsoil and (or) subsoil will be restored? ☐ yes ☒ no

If no, explain: SEE SOIL and Management Plan

Topsoil will be restored and seedbeds prepared as necessary to promote effective revegetation and to stabilize slopes and mine floor? ☐ yes ☐ no

If yes, give details; if no, explain: _____

Topsoil will be replaced to an approximate depth of 1.5 feet on the pit floor and a depth of 1.0-1.5 feet on slopes.

Topsoil will be distributed evenly over the site ☒ yes ☐ no

If no, explain: _____

If topsoil is in short supply, it will be strategically placed in depressions and low areas in adequate thickness to conserve moisture and promote revegetation? ☐ yes ☒ no

If no, explain: _____

See budget

Topsoil will be moved when conditions are not overly wet or dry? ☒ yes ☐ no

If no, explain: _____

SEE BUDGET MANAGEMENT PLAN

Topsoil will be imported? ☐ yes ☒ no

Explain: _____

IF NECESSARY

Synthetic topsoil will be used and (or) made on site to supplement existing topsoil? ☐ yes ☒ no

If no, explain: _____

See Budget

Materials, such as till, loess, and (or) shale, are available on site that could be used to supplement topsoil for reclamation? ☐ yes ☐ no

If no, explain: _____

N/A

Silts from settling ponds or a filter press will be used for reclamation? ☐ yes ☐ no

If no, explain: _____

IF NECESSARY

Settling pond clay slurries will be pumped or hauled to other segments for reclamation? ☐ yes ☐ no

If no, explain: _____

IF NECESSARY

Topsoil will be replaced with equipment that will minimize compaction, or it will be plowed, disked, or ripped following placement? ☐ yes ☐ no

If no, explain: _____

Topsoil will be immediately stabilized with grasses and legumes to prevent loss by erosion, slumping or crusting? ☐ yes ☐ no

If no, explain: _____

REVEGETATION

The revegetation plan should show how, when, where, and what vegetation will be planted. A thorough and detailed plan increases the chances that plants are well established when reclamation is finished. It is best to do test and demonstration plantings early and to monitor the results so that appropriate changes can be made before mining ceases.

The mine site is in: ☐ eastern Washington ☒ western Washington?

The mine site is: ☐ wet ☒ dry?

The average precipitation is 48 inches/year.

Revegetation of a segment will start during the first proper planting season (fall for grasses and legumes, fall or late winter for trees and shrubs) following restoration of slopes? ☐ yes ☐ no

If yes, give details; if no, explain: _____

SEE BELOW
PLANTING DETAIL

Test plots will be used to determine optimum vegetation plans? ☐ yes ☒ no

The site will not be actively revegetated because:

- ☐ It is a rural area with a rainfall exceeding 30 inches annually and erosion will not be a problem (requires approval of DNR Region office).
- ☐ Demonstration plots and areas will be used to show that active revegetation is not necessary.
- ☐ Revegetation is inappropriate for the approved subsequent use of this surface mine.

Explain: N/A

Documentation is attached? ☐ yes ☒ no

RECOMMENDED PIONEER SPECIES

Segmental reclamation allows plant communities to develop according to ecological succession stages. A combination of natural reseeding and intentional planting is the most effective means of establishing diverse and prosperous pioneer vegetation. Revegetation with grass and legumes should occur during the first appropriate season after slope shaping and replacement of topsoil. Establishing widespread healthy vegetation generally takes several seasons. Follow-up evaluations may be necessary to monitor progress and to determine why plants did not thrive.

In eastern Washington, continuous ground cover may not be achievable because of arid conditions or sparse topsoil. However, revegetation shall be as continuous as reasonably possible.

The sections below give suggestions for species most likely to survive in different types of climate. Check the species that will probably be planted at your mine site.

Western Washington Dry Areas

- | | |
|---------------------------------------------------------|------------------------------------------------|
| <input type="checkbox"/> alfalfa* | <input type="checkbox"/> lupine* |
| <input checked="" type="checkbox"/> clover* | <input type="checkbox"/> orchard grass |
| <input checked="" type="checkbox"/> cereal rye | <input type="checkbox"/> perennial rye |
| <input checked="" type="checkbox"/> colonial bent grass | <input type="checkbox"/> ponderosa pine |
| <input checked="" type="checkbox"/> creeping red fescue | <input checked="" type="checkbox"/> red alder* |
| <input checked="" type="checkbox"/> Douglas fir | <input type="checkbox"/> shore pine |
| <input type="checkbox"/> ground cover (other) | <input type="checkbox"/> shrubs |

Other _____

Western Washington Wet Areas

- | | |
|----------------------------------------------|--------------------------------------------|
| <input type="checkbox"/> birdsfoot trefoil | <input type="checkbox"/> sedges |
| <input type="checkbox"/> cedar | <input type="checkbox"/> tubers |
| <input type="checkbox"/> cottonwood | <input type="checkbox"/> wetland grasses |
| <input type="checkbox"/> creeping red fescue | <input checked="" type="checkbox"/> willow |
| <input type="checkbox"/> red alder* | |

Other NO MINE DISTURBANCE
WITHIN 200' OF OHW

Eastern Washington Dry Areas

- | | |
|---------------------------------------------------|------------------------------------------|
| <input type="checkbox"/> alder* | <input type="checkbox"/> juniper |
| <input type="checkbox"/> alfalfa* | <input type="checkbox"/> lodgepole pine |
| <input type="checkbox"/> black locust* | <input type="checkbox"/> lupine* |
| <input type="checkbox"/> deciduous trees | <input type="checkbox"/> ponderosa pine* |
| <input type="checkbox"/> deep-rooted ground cover | <input type="checkbox"/> Russian olive* |
| <input type="checkbox"/> diverse evergreens | <input type="checkbox"/> shrubs |
| <input type="checkbox"/> grasses | <input type="checkbox"/> clover* |

Other N/A

Eastern Washington Wet Areas

- | | |
|-------------------------------------|---------------------------------------|
| <input type="checkbox"/> alder* | <input type="checkbox"/> serviceberry |
| <input type="checkbox"/> cottonwood | <input type="checkbox"/> tubers |
| <input type="checkbox"/> poplar | <input type="checkbox"/> willow |
| <input type="checkbox"/> sedges | |

Other N/A

Give planting details: _____

SITE WILL BE GRADED AND RIPPED.
SOILS WILL BE REDISTRIBUTED,
DURING DRY MONTHS
(GENERALLY SUMMER)
GRASS AND GROUND COVER
EARLY AS FALL AS WEATHER
PERMITS.
RESEED IF NECESSARY IN
SPRING AS WEATHER ALSO
PERMITS

See Management Plan

* indicates nitrogen-fixing species

PLANTING TECHNIQUES

Mined sites generally present harsh conditions that hamper revegetation. Nevertheless, much can be done to increase the chances for successful seeding and planting.

Revegetation at this site will require:

- Ripping and tilling? ☒ yes ☐ no
Blasting to create permeability? ☐ yes ☒ no
Mulching? ☐ yes ☒ no
Irrigation? ☐ yes ☒ no
Fertilization? ☒ yes ☐ no
Importation of clay or humus-bearing soils? ☐ yes ☒ no
Adding other soil conditioners or amendments? ☒ yes ☐ no

Give details: IF NECESSARY

WEATHER CONDITIONS
TIME PERMITTING

Trees and shrubs will be planted in topsoil or in subsoil amended with generous amounts of organic matter? ☐ yes ☐ no

If yes, give details; if no, explain: N/A

Mulch will be piled around the base of trees and shrubs? ☐ yes ☐ no

High-quality stock will be used? ☐ yes ☐ no

Trees and shrubs will be planted while they are dormant? ☐ yes ☐ no

Stock will be properly handled, kept cool and moist, and planted as soon as possible? ☐ yes ☐ no

Seeds will be covered with topsoil or mulch no deeper than a half inch? ☐ yes ☐ no

If any answers are no, explain: _____

A Reclamation and Seeding Report (Form SM-3) will be filed with the Department upon completion of revegetation for each segment? ☒ yes ☐ no

If no, explain: _____

Note: The Department of Natural Resources will not release a reclamation permit or performance security until it deems that effective revegetation has commenced. That is, vegetation has survived through at least one growing season and come up again (usually about 18 months).

MAPS

Information about your proposed reclamation plan should be provided on several types of maps: (1) a site-access map, (2) a pre-mining topographic map, (3) a reclamation sequence map, and (4) a final reclamation map with at least two intersecting cross sections. These maps and cross sections should be at an appropriate scale to show the desired information.

Suggested Map Scales

Site size	Map scale
3-5 acres	not less than 1 inch = 50 feet
5-10 acres	not less than 1 inch = 100 feet
10 or more acres	not less than 1 inch = 200 feet

Other Map Requirements

Preferred map size is 11 x 17 inches unless otherwise noted; larger maps are acceptable, but you must be prepared to furnish additional copies, if requested. If maps are small, they may be grouped together on a single sheet of paper.

Each map must include:

- ☐ Scale ☐ Bar scale ☐ North arrow
- ☐ Legend with all symbols defined or explained
- ☐ Title block with the following information:
 - ☐ Title of map
 - ☐ Application/permit number
 - ☐ Name and address of applicant/permit holder(s)
 - ☐ Space for signature
 - ☐ Map/exhibit number
 - ☐ Date map was drawn or revised

SITE ACCESS MAP

An 8½ x 11 inch copy of the pertinent section of a road map that clearly shows how to get to the site from the nearest town.

PRE-MINING TOPOGRAPHIC MAP¹

This map is necessary to establish the location and setting of the mine site. It must show:

- ☐ Permit area plus an appropriate border on all sides.
- ☐ Elevations and contours, natural ground slopes, drainage patterns, and other topographic features².
- ☐ Boundaries and names of counties and municipalities.
- ☐ Boundaries of property ownership, including adjacent properties.
- ☐ Names and addresses of adjacent property owners.
- ☐ Locations and names of other mines.
- ☐ Locations and names of all roads, railroads, utility lines, or any other rights of way.
- ☐ Locations and names of all streams and natural and manmade drainways.

¹ For a base map, use U.S. Geological Survey 7.5-minute maps, which are available from sporting goods stores or may be ordered from the U.S. Geological Survey, (509) 353-2524, or DNR Photo and Map Sales, P.O. Box 47031, Olympia, WA, 98504-7031, (206) 902-1234.

² Contour intervals are deemed adequate if they accurately reflect the conditions of the site. Generally, contour intervals should be between 5 and 20 feet.

- ☐ Locations and names of significant buildings, parks, and other manmade features.
- ☐ Locations and names of all wells, lakes, springs, and existing wetlands¹.
- ☐ Boundaries of the areas that will be disturbed by mining.

RECLAMATION SEQUENCE MAP

This map shows the details of the plan for mining and segmental reclamation. It should cover the same area as the pre-mining topographic map and display the following information:

- ☐ Permit area plus an appropriate border on all sides.
- ☐ Boundaries of the areas that will be disturbed by mining.
- ☐ Locations of all permanent boundary markers.
- ☐ Location of proposed access roads to be built in conjunction with the surface mining operation and whether they will be reclaimed or left as roads.
- ☐ Locations and types of setbacks and berms.
- ☐ Numbered segments and the direction and sequence of mining. Avoid mining from the center outward.
- ☐ Topsoil storage areas and sequence of stripping, storing, and replacement on mined segments.
- ☐ Overburden storage areas and sequence of stripping, storing, and replacement of soil on mined segments.
- ☐ Waste rock piles and how they will be reclaimed and stabilized.
- ☐ Operation plant and processing areas.
- ☐ Measures taken to protect adjacent surface resources, including prevention of slumping or landslides on adjacent lands.
- ☐ Location and description of the erosion control systems, including drainage facilities and settling ponds.
- ☐ Other pertinent features.

FINAL RECLAMATION MAP

This is a topographic map of the site as it will look after final reclamation. It must show all applicable data required in the narrative portion of the reclamation plan and details of the mine reclamation. The map should cover the same area as the pre-mining topographic map and should display the following information:

- ☐ Permit area plus an appropriate border on all sides.
- ☐ Final elevations and contours, adjacent natural ground slopes, reclaimed drainage patterns, and other topographic features.
- ☐ Locations and names of all roads, railroads, utility lines, or any other rights of way.
- ☐ Locations and names of all streams and drainages.
- ☐ Locations and names of significant buildings, parks, and other structures, facilities, or features.

¹ Existing wetland should be clearly shown on the plans. If wetland questions arise, contact the Department of Ecology (DOE).

² Information about geology may be available from the Department of Natural Resources, Division of Geology and Earth Resources, P.O. Box 47007, Olympia, WA 98504-7007, (206) 902-1450 or the USGS, (509) 353-2524.

- ☐ Locations and names of all lakes, springs, and wetlands.
- ☐ Location and depth of replaced topsoil.
- ☐ Permanent drainage and water-control systems (with expanded view, if needed).
- ☐ Area to be revegetated and proposed species.
- ☐ Other information pertaining to the permit and required by statute.

Cross sections

- ☐ At least two cross sections (generally at right angles) show original and final topography and water table.

GEOLOGIC MAP²

When required by the DNR, a detailed description of geologic setting and the type of deposit to be mined.

PHOTOS AND OTHER SUPPORTING DATA

Aerial and (or) other photographs should be submitted in support of the application, when feasible. Additional maps, photos, and detailed reports may be required by DNR.

FINAL CHECK

- ☐ All documents submitted have the date, the name and address of the permit holder, and the application number on every page of the material.
- ☐ The plan contains predominantly relevant information.

When signed by the applicant and approved by the Department of Natural Resources, this document and the associated maps, cross sections, and other attachments will be the approved reclamation plan for this permit that the permit holder must follow. Significant variations from the approved reclamation plan may require that a new plan be submitted to the Department for approval.

I hereby agree to comply with this plan. <i>[Signature]</i> Sub. Be Sect. Trees Alpine Sand & Gravel, Inc. (Signature of applicant/permit holder)		Date signed 12/13/02
I hereby verify that I have seen and approve this plan. <i>[Signature]</i> Sub. Be Sect. Trees Alpine Sand & Gravel, Inc. (Signatures of all individuals with possessory interest)		Date signed 12/13/02
FOR DEPARTMENTAL USE ONLY		
Approved by S. Zurenko - Per SEPA approval		Date approved 7-5-96
Comments by Region final approval subject to SEPA & Co. approval		

MANAGEMENT PLAN

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SOILS

- ▶ Twenty inches (20") of organic soils will be stripped and stockpiled separately from subsoil.
- ▶ Soils will not be used or sold as a by-product of sand and gravel.
- ▶ Soil not used immediately will be stripped and stockpiled separately and revegetated to avoid erosion.
- ▶ Drainage will be prepared prior to stockpiling.
- ▶ Stockpiles will be shaped to prevent water from ponding.
- ▶ Soils should be moved under dry conditions (June-September).
- ▶ Soils will be stabilized with grass seed to prevent erosion and/or until required for reclamation.
- ▶ Any grading of final slopes for reclamation will be done during low ground water, or early fall.
- ▶ Once final grading is complete any soil stored in any berms will be spread over the graded area. This should occur mid to late fall. Planting will be conducted the following spring.
- ▶ The soil stockpile in Phase I will be used to supplement reclamation Phase II and used completely in Phases III and IV.
- ▶ Proper handling of all soil will be done with care so not to damage soil needed for revegetation.

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PAGE 2
MANAGEMENT PLAN

Recommended planting stocks for Western Washington area as follows:

- Red Alder
- Shore Pine
- Ponderosa Pine
- Douglas Fir
- Popular
- Big Leaf Maple
- Willow
- Tree Lupine

Planting should be done while in the dormant stage.

Recommended vegetation, revegetation mixes successful in this area are as follows:

• Creeping Red Fescue	30 lbs.
• Perennial Rye	15 lbs.
• Orchard Grass	25 lbs.
• Colonial Bent Grass	5 lbs.
• White Clover	5 lbs.
• Cereal Rye	<u>5 lbs.</u>
TOTAL:	85 lbs./acre

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SOIL BUDGET

REFERENCE SITE: Boe Sand and Gravel dba Alpine Sand and Gravel 70-011016

The determined amount of organic soil is 20 inches. This 20 inches of soil will be stripped and used for reclamation.

Estimated volume of soil available:

Existing stockpile	≈ 60,000 cubic yards
Unstripped soils	≈ <u>80,396</u> cubic yards
TOTAL:	≈ 140,396 cubic yards

Total area to be reclaimed ≈ 50.68 acres at a depth of 18 inches.

Estimated volume of soil needed for reclamation ≈ 122,645 cubic yards.

Soil surplus ≈ 17,751 cubic yards.

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JUN 26 1995
DNR Central Region
RECEIVED
JUN 17 1997

SOILS PROFILE

Soils on site are very deep. Soils are somewhat excessively drained on terraces and out wash plains. Vegetation consist mainly of conifers. Average annual precipitation ranges between 33 inches to 45 inches.

Soils typical of this area are classified Everett Series. Surface layer typically is dark reddish brown very gravelly sandy loams about three inches thick. The Subsoil is dark brown and yellowish brown, extremely gravelly sandy loams about 17 inches thick. The substratum is to a depth of 60 inches is olive brown extremely gravelly loamy sand and dark grayish brown extremely gravelly sand.

Soils have a high infiltration rate when thoroughly wet. These consist of deep well drained soils. These soils have a high water transmission.

Spanaway soils are found on the outwash plains. See attached soils report. Permeability is rapid. Rooting depth is 60 inches or more. Run-off is slow and the hazard of water erosion is slight.

FLOOD POTENTIAL

Hydrologic Group A:

Frequency - None
Duration - No information
Months - No information
Depth \geq 60
Month - No information

POTENTIAL WILDLIFE HABITAT

Wildlife habitat potential is effected extremely in these area's:

Open land wildlife - Poor
Wet land wildlife - Poor
Wet land plants - Poor
Revegetation - Poor

Soils have a high infiberatation rate when thoroughly wet. These consist of deep well drained soils. These soil have a high rate of water transmission.

Information concurs with the Soil Survey of Thurston County, USDA Natural Resources Conservation Service.

70-011016



WASHINGTON STATE DEPARTMENT OF
Natural Resources

COUNTY OR MUNICIPALITY
**APPROVAL FOR
SURFACE MINING
(Form SM-6)**

NAME OF COMPANY OR INDIVIDUAL APPLICANT(S) Same as name of the exploration permit holder. (Type or print in ink.) <i>Boe Sand & Gravel, Inc. D/B/A Alpine Sand & Gravel, Inc. including past history of mining companies and corporations on property.</i>		TOTAL ACREAGE AND DEPTH OF PERMIT AREA (Include all acreage to be disturbed by mining, setbacks, and buffers, and associated activities during the life of the mine.) (See SM-8A.) Total area disturbed will be <u>145</u> acres Maximum vertical depth below pre-mining topographic grade is <u>60</u> feet Maximum depth of excavated mine floor is <u>135</u> feet relative to mean sea level										
MAILING ADDRESS <i>P.O. Box 443 East Olympia, WA 98504</i>		COUNTY <u>Thurston</u>										
		No attachments will be accepted. Legal description of permit area:										
Telephone <i>(360) 491-2822</i>		1/4	1/4	Section	Township	Range						
			<i>SW</i>	<i>6</i>	<i>17</i>	<i>1W, W.M.</i>						
Proposed subsequent use of site upon completion of reclamation <i>Industrial and/or Residential Development</i>		RECEIVED AUG 30 2002 Geology and Earth										
Signature of company representative or individual applicant(s) <i>[Signature]</i>		Name and title of company representative (please print) <i>Gordon L. Boe Sec./Treas.</i>		Date signed <i>8/9/02</i>								
TO BE COMPLETED BY THE APPROPRIATE COUNTY OR MUNICIPALITY:												
Please answer the following questions 'yes' or 'no'. 1. Has the proposed surface mine been approved under local zoning and land-use regulations? 2. Is the proposed subsequent use of the land after reclamation consistent with the local land-use plan/designation? <i>Grandfathered Non-Conforming use</i> <i>Residential - Yes Industrial - No</i> When complete, return this form to the appropriate Department of Natural Resources regional office.						<table border="1"><tr><td>Yes</td><td>No</td></tr><tr><td></td><td><input checked="" type="checkbox"/></td></tr><tr><td></td><td></td></tr></table>	Yes	No		<input checked="" type="checkbox"/>		
Yes	No											
	<input checked="" type="checkbox"/>											
Name of planning director or administrative official (please print) <i>Robert Smith</i>		Address <i>Development Services Dept. 2000 Lakemidge Drive SW Olympia, WA 98501</i>										
Signature <i>[Signature]</i>												
Title (please print) <i>Associate Planner</i>												
Telephone <i>360-754-4023</i>		Date <i>8/26/02</i>		DNR Reclamation Permit No. <i>11016</i>								
FOR DEPARTMENT USE ONLY:												

DEC 27 2002



P.O. BOX 443
EAST OLYMPIA, WA 98540-0443

(360) 491-2822
FAX 491-2897

December 23, 2002

**Matt Brookshier
Department of Natural Resources
PO Box 47000
Olympia WA 98504-7000**

**RE: Surface Mining Reclamation Permit 70-011016
Reclamation Plan narrative required by RCW 78.44.091**

Dear Mr. Brookshier:

Alpine Sand & Gravel, Inc. has received your 15 Oct. 02 Surface Mining Reclamation Permit Checklist. The following information should answer your questions with respect to Alpine's 1996 Pre-Approved Reclamation Plan.

Proposed Mining and Reclamation:

The permit boundary for this site is 146 acres. Approximately 94.5 acres have been disturbed from existing and previous mining activities. All mining disturbance, previous and future, is included within the 146 acre boundary. The mining disturbance boundary includes all mining related operations including excavation, product stockpiles, topsoil stockpiles, haul roads, washing and crushing process plants, offices, shops, wells, fences, settling ponds, stormwater management facilities, concrete plant, and all necessary equipment to operate a sand and gravel, concrete, and crushed rock operation. No mining operations are proposed beyond the existing permit boundary.

No mining will occur in the Shoreline Conservation Setback located within 200' from the Deschutes River. However, Alpine will maintain its right to use its Shoreline Substantial Development Permit No. SH-TCO-13-74 to operate a sand and gravel operation withing the 200' shoreline in Section 6. TWP 17 N, R1, W.W.M. in Thurston County.

The East, South and Northeast corners of the permit area are delineated by cyclone fencing. The Northwest corner and North of the BPA Tower corner are green metal posts located on the maps.

The topsoil stored in the permanent setback areas will be pushed down slopes then replanted with grass and Douglas Fir trees.

The Segmented Reclamation Plans intent is to mine property in lifts of 20 feet or less enabling adequate floor area to stockpile material and products. Alpine's mining method is to cut slopes then spread soil over the slopes to enable replanting of grass and Douglas Fir trees. In addition, Alpine will mine in 20 foot lifts to within 20 feet from the permanent setback and their cutting required slope; refer to cut slope detail on Map 2 of 2.

All current mining operations including stormwater and waste water are covered by Alpine's NPDES permit. Alpine's Department of Ecology NPDES Permit No. is WAG-50-1037 issued July 6, 1994 to August 6, 2004. Alpine operated from June 15, 1976 to July 6, 1994 under Department of Ecology Waste Discharge Permit Number 5052.

Alpine has finished the necessary staking of the property corners and staked boundaries of the 1973 Reclamation Plan.

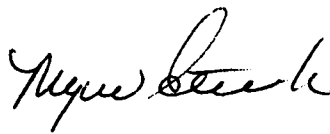
Alpine is including a copy of its Certificate Of Ground Water Right Permit No. 4766. Included is a copy of the well logs. The well is located approximately 200 feet north of the concrete plant. The depth from ground surface to water level before pumping is 46 feet. The drilled depth of the well is 106 feet. Close examination of the well logs suggest the 46 foot water encountered is a shallow semi-confined aquifer.

If you have any questions, please call Gordon Boe or Myron Struck at (360) 491-2822.

Sincerely,



Gordon Boe



Myron Struck

CERTIFICATE RECORD No. 20 PAGE No. 4573-1

STATE OF WASHINGTON, COUNTY OF Thurston

Certificate of Ground Water Right

Issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and amendments thereto, and the rules and regulations of the State Supervisor of Water Resources thereunder.

THIS IS TO CERTIFY That FRED R. FRANKLIN

of Olympia, Washington, has made proof to the satisfaction of the State Supervisor of Water Resources of Washington, of a right to the use of the ground waters of well

located within SE 1/4

Sec. 6, Twp. 17 N., R. 1 W. W.M.,

for the purpose of irrigation and domestic supply

under and subject to provisions contained in Ground Water Permit No. 4766 issued by the State Supervisor of Water Resources and that said right to the use of said ground waters has been perfected in accordance with the laws of Washington, and is hereby confirmed by the State Supervisor of Water Resources of Washington and entered of record in Volume 20 at page 4573-1; that the right hereby confirmed dates from May 9, 1958; that the quantity of ground water under the right hereby confirmed for the purposes aforesaid, is limited to an amount actually beneficially used for said purposes, and shall not exceed 125 gallons per minute; 60 acre-feet per year for domestic supply and the irrigation of 30 acres.

Special provisions required by the Supervisor of Water Resources:

A description of the lands to which such ground water right is appurtenant:

SW 1/4, NE 1/4, and NW 1/4, Sec. 6, T. 17 N., R. 1 W. W.M., EXCEPTING therefrom two (2) acres out of the southeast corner of said tract conveyed to Thurston County by deeds recorded in Volume 1 of Right of Way Deeds at page 83, and Volume 129 of Deeds at page 32, respectively; EXCEPTING ALSO one (1) acre out of the northeast corner of said tract described as follows:

Beginning at a point one (1) rod south of the northeast corner of said tract; running thence west 206.7 feet; thence south 206.7 feet; thence east 206.7 feet; thence north 206.7 feet to the point of beginning.

**RECORD BY WELL DRILLER OR OTHER CONSTRUCTOR OF WORKS
FOR WITHDRAWAL OF GROUND WATER**

Under Permit No. G. W. _____

("The well driller or other constructor of works for the withdrawal of public ground waters shall be obligated to furnish the permittee a certified record of the factual information necessary to show compliance with the provisions of this section." Sec. 8, Chap. 200, Laws of 1943.)

1. Fred Fralich Rt 5 Box 511 Olympia, Wash
(Name and address of owner of well or other works for withdrawal of water)
2. Type; name or number of works where water is taken Well
(Well, tunnel or infiltration trench)
3. Date on which work on well or other structure was started MAY 26, 1958
4. Date on which work was completed JUNE 5, 1958
5. If work on well or other structure was abandoned, give date _____
and reason for abandonment _____

6. DESCRIPTION OF WORKS:

(a) WELL: Depth 106 ft. Diameter 8 in. or ft. Dug or drilled Drilled
Flowing or pump well Pump Water Temp. 46°

If PUMP WELL: Type and size of pump is _____

Type and size of motor or engine is _____

Depth from ground surface to water level before pumping 46'After continuous operation for _____ hours, the measured discharge of the pump is
(At least four)_____ g.p.m., and the drawdown of water level is _____
(Pumping level minus static water level)Recovery data (taken after pump has been shut off) (time taken as zero when pump turned off) (water level measured from well top to water level) -
No pump test made at this time

Time	Water Level	Time	Water Level
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Date of test _____

If FLOWING WELL: Measured discharge _____ g.p.m. on _____
(Date)Shut-in pressure at ground surface _____ lbs. per sq. in. on _____
(Date)Water is controlled by _____
(Cap, valve, etc.)

CASING: (Give diameter, commercial specifications and depth below ground surface of each casing size.)

8 in. diameter Sched 30 Black steel pipe 1 ft. above ground to 106 ft.
_____ in. diameter _____ from _____ to _____
_____ in. diameter _____ from _____ to _____
_____ in. diameter _____ from _____ to _____

Describe and show depth of shoe, plug, adapter, liner or other details:

OK
JMM

Cast steel drive shoe set at 106'

Perforated casing or screens:

Perforated 18 holes per ft 1 1/8" from 72 to 103
 (Number per foot and size of perforations, or describe screen)
 from to
 from to
 from to
 from to

LOG OF WELL OR TUNNEL: (Describe each stratum or formation clearly, indicate if water bearing and give thickness and depth as indicated.)

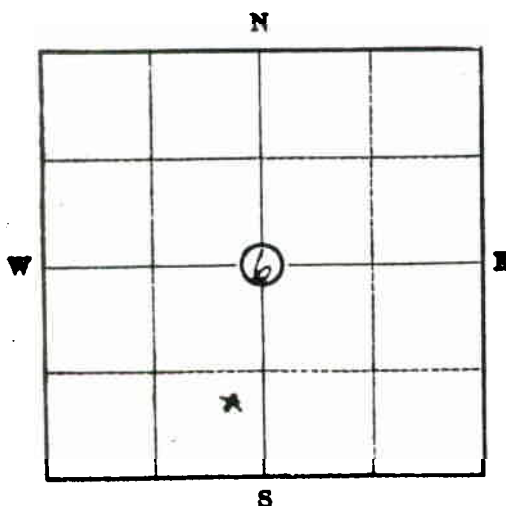
MATERIAL	Thickness (feet)	Depth to bottom (feet)
Sand	21	21
Cemented gravel	46	67
Gravel-sand	3	70
Cemented gravel	5	75
Gravel-sand	10	85
Cemented gravel	5	90
Gravel-sand	2	92
Cemented gravel	4	96
Gravel	7	103
Cemented gravel	3	106

(b) INFILTRATION TRENCH OR TUNNEL: Type _____

Dimensions: _____
 (Tunnel—length, course, and cross-sectional size) (Trench—width and maximum depth)

Bottom width _____ ft. Discharge _____ g.p.m. Date of test _____

Position of water bearing stratum with reference to portal of tunnel _____



Sec. 6 Twp. 17 Rge. 1W

Show approximate location of well or other structure with (X) on section plat at left.

Patterson Drilling Co

M.B. Patterson

Signature of well driller or other contractor

2513 E 4th Ave Olympia

Address

Scale: 1" = 2000'

SECTION PLAT

Sec. 6 Twp. 17 N. R. 14

N

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DEPARTMENT OF CONSERVATION

MAY 9 1958

A.M. 7 8 9 10 11 12 1 2 3 4 5 6 P.M.

▲

E

W



Show by a cross (X) the location of the well or other works covered by the application. Show by circle (O) the locations of other wells or works within a quarter of a mile. Also indicate traveling directions from nearest town on main highway.

Scale: 1 inch = 800 feet.